***Press* Release**

The Meteorological Office

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Melting sea ice caused by global warming?

Observations going back to early in the century show that the extent of sea ice in the N Hemisphere has been decreasing since the 1950s. A report published in "Science" (3 December) shows that the rate at which the ice is disappearing is accelerating, and suggests that this is due to global warming.

The observations were compared to simulations from climate models carried out at The Met.Office Hadley Centre and the Geophysical Fluid Dynamics Laboratory of the US National Oceanographic and Atmospheric Administration. Scientists at both centres are able to simulate the depletion of sea-ice only if heating due to man-made increases in greenhouse gases is included in their models. The observed changes are much larger than the natural variability simulated by the models.

These results strongly suggest that the observed decrease in northern hemisphere sea ice extent is related to man-made global warming. This supports the conclusion of a recent study by the Hadley Centre based on changes in surface temperature over the twentieth century which also indicated that human activities are altering climate. The climate models go on to predict that sea ice extent and thickness will decrease substantially over the next century.

The results come from joint research by scientists from eight institutions around the world, including John Mitchell from the Met. Office Hadley Centre. The lead author, Konstantin Vinnikov, is at the University of Maryland.

Notes for editors

1 Sea ice extent is the area defined by sea-ice concentrations of at least 15%.

2 Sea-ice reflects back sunlight and so has a cooling effect on climate. Melting sea-ice amplifies global warming; this positive feedback is already included in climate models.

3 Melting sea-ice does not contribute to sea level rise, as it is already floating on the sea.

For media enquiries contact:
The Met. Office Press Office (+44) 1344 856655

email: webmanager@meto.gov.uk
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